

Notice of Allowability

Application No.

09/917,535

Examiner

CHAMELI C DAS

Applicant(s)

THOMPSON ET AL.

Art Unit

2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 8/16/04.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ The drawings filed on 27 July 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892) *
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Art Unit: 2122

1. This action is in response to the amendment filed on 8/16/04.
2. The Abstract has been amended.
3. In view of applicant's argument filed on 8/16/04, the rejection of claims 1-20 under 35 USC 103(a) made in the earlier office action is hereby withdrawn.
4. Claims 1-20 have been allowed.

REASON FOR ALLOWANCE

5. The following is an examiner's statement of reason for allowance:

The cited prior art taken alone or in combination fail to teach, in combination with the other claimed limitations, a method for reducing cache memory misses in a computer that performs context switches between a first context and a second context, the method comprising: identifying a critical memory references within the first prefetch region during the compilation, the critical memory references within the first prefetch region corresponding to data that may be needed in cache memory if a context switch occurs from a process or thread associated with the second context to a process or thread associated with the first context during program execution by the computer, as recited in the independent claims 1, 8 and 15.

In the closest prior art (US 5,784,711), Chi discloses a method for identifying a prefetch region in a memory element during compilation of a computer program by the computer; cache prefetching; reducing the average number of data cache misses if a cache miss cannot be avoided.

Another prior art (US 5,361,337), Okin discloses the method for switching the context of state elements of a processor within a clock cycle when a cache miss occurs.

Art Unit: 2122

Neither Chi nor Okin disclose the method for identifying a critical memory references within the first prefetch region during the compilation, the critical memory references within the first prefetch region corresponding to data that may be needed in cache memory if a context switch occurs from a process or thread associated with the second context to a process or thread associated with the first context during program execution by the computer, as recited in the independent claims.

Conclusion

6. The prior art made or record and not relied upon is considered pertinent to applicant's disclosure.

TITLE: System and method for insertion of prefetch instructions by a compiler, US 6651245 B1

TITLE: Cache optimization for programming loops, US 6282706 B1

TITLE: Branch on cache hit/miss for compiler-assisted miss delay tolerance, US 5761515 A

TITLE: Cache memory system and method for a digital signal processor, US 6732235

TITLE: Scaleable hash table for shared-memory multiprocessor system, US 6578131

TITLE: Automatic Compiler Techniques for Thread Coarsening for Multithreaded Architectures,
author: Zoppetti et al, ACM, 2000.

TITLE: The Performing Implications of Thread Management Alternatives for Shared-Memory
Multiprocessors, author: Anderson et al, ACM, 1989.

Art Unit: 2122

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chameli Das whose telephone number is 703-305-1339.

The examiner can normally be reached on Monday-Friday from 7:00 A.M. to 3:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Tuan Dam can be reached at 703-305-4552. The fax number for this group is (703) 872-9306.

After October 25, 2004, the examiner can be reached at new telephone number (571) 272-3696, and the examiner's supervisor Tuan Dam can be reached at (571) 272-3695.

An inquiry of general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is 703-305-9600.

Chameli C. Das
CHAMELI DAS
PRIMARY EXAMINER

9/28/09